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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,353	10/22/2003	Olga Kryliouk	5853-415	6647

7590 04/25/2005

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EXAMINER

LEE, HSIEN MING

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 04/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary

Application No.

10/691,353

Applicant(s)

KRYLIOUK ET AL.

Examiner

Hsien-ming Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-19 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>050304</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION*Specification*

1. The disclosure is objected to because of the following informalities:

On page 6, "BRIEF DESCRIPTION OF THE DRAWINGS", the description is **not consistent** with figures. For example, on page 6, it states "FIG.1(a) shows ...", whereas, figure marks as "FIG.1A." (Emphasis added) The same error also appears on Figs. 1B, 2A, 2B, 4A, 4B, 8A and 8B. Appropriate correction is required.

Allowable Subject Matter

2. Claims 12-19 are allowed.
3. The following is a statement of reasons for the indication of allowable subject matter:

Cuomo et al. (US 2002/0086534) teach a method for forming group III-N based articles (i.e. GaN), comprising the steps of:

- providing a silicon substrate 12 (paragraph [0068]);
- depositing a zinc oxide (Zn) layer 16 on said substrate 12 (paragraph [0069])
and
- depositing a single crystal Group III-N (i.e. gallium nitride or GaN) layer 14 on said ZnO layer 16 (paragraph [0067], [0062]), wherein at least a portion of said step of depositing group III-N layer 14 is performed at a temperature of less than 600 °C, i.e. 500 °C (paragraph 0122)).

In contrast, Cuomo et al. neither teach nor suggest that the zinc oxide is a *single crystal* zinc oxide and the silicon substrate is a *single crystal* silicon.

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In the examiner's opinion, it would not have been obvious to a person of ordinary skill in the art to use both single crystal Zinc oxide and single crystal silicon substrate for depositing single crystal group III-N, especially in view of applicant's written description indicating the novelty of such resultant structure, which is patentably distinguish over the prior art of record.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hsien-ming Lee whose telephone number is 571-272-1863. The examiner can normally be reached on Tuesday-Thursday (8:00 ~ 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hsien-ming Lee
Primary Examiner
Art Unit 2823

April 21, 2005

HSIEN-MING LEE
PRIMARY EXAMINER

4/21/2005